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# Nuclear Power and Geography: How the European Communities Failed to Regulate the Siting of Nuclear Installations at Borders in the 1970s and 1980s

Jan-Henrik Meyer\*

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**Abstract:** »Kernkraft und die Geographie europäischer Grenzen. Wie die Europäischen Gemeinschaften daran scheiterten, gemeinsame Regeln für die Standortwahl für Kernkraftwerke festzulegen«. Nuclear power plants require cooling water. When numerous nuclear plants were built in the 1970s, they were thus placed at major rivers. This caused cross-border problems, since in Europe, many rivers crossed or constituted borders. As awareness for thermal and radioactive pollution grew, border areas became hotbeds of European anti-nuclear protest. Advocates of European integration suggested that the European Communities (EC) were best positioned to resolve this issue. This article analyses the EC rulemaking attempts regarding the siting of nuclear power plants and explains why they failed. It argues that while the cross-border nature of the problem of nuclear installations at borders justified EC-level legal solutions, the geography of nuclear plants militated against supranational solutions – at a time of national vetoes and when energy security was considered a national sovereignty concern. The article is based on the analysis of primary sources from European Union and national archives. By taking the physical and political geography of nuclear energy into account, this article offers new perspectives on the role of borders and border studies, on the history of nuclear energy and society, and on the history of European integration.

**Keywords:** Geography, nuclear energy, borders, environment, European integration.

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## 1. Introduction

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In September 2022, the Swiss authorities announced plans to place their final repository for nuclear waste right next to the German border. Swiss officials claimed that the location was chosen for purely geological reasons, which

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seemed suspicious to critics on the German side. Back in 2016, the site had been excluded for technical reasons, only to be repropoed again later. This smacked of political fiddling (Grefe-Huge, Wahnbaeck, and Stockrahm 2022; Nahr and Ratsch 2022).

This is not the first time that risk-prone and potentially polluting plants have been sited near borders. In fact, choosing border sites for nuclear installations has been common practice for a long time (Kaijser and Meyer 2021). From the point of view of national or local decision-makers, selecting a border site looked like a convenient solution. It helped to externalise ecological and political impacts to neighbours, while keeping the economic benefits to themselves. The border separated potential opponents and reduced the number of voters affected (Kaijser and Meyer 2018, 11).

However, it was not simply due to what critics saw as the plotting of ill-intentioned politicians that many nuclear installations in Europe were sited near national borders. Geography did indeed matter in at least two respects. First, densely populated Western Europe consists of relatively small countries with long borders. This meant that it was hard to avoid placing nuclear plants “near” a national border (Kaijser and Meyer 2021, 257), and that in Europe nuclear sites were placed much closer to the border (between 0-20 km) than elsewhere in the world (OECD-NEA 1979, 7). Second, nuclear plants were close to borders because they were located along rivers and by the sea to have access to sufficient cooling water, since they only converted about a third of the primary energy into electricity (European Commission 1980, 124). In Europe, large rivers like the Rhine served as “natural frontiers” (Norman 1954; Sahlins 1990). As they flow from one country to another, power plants’ cooling water raise river temperatures – an important environmental concern in the early 1970s – creating cross-border upstream-downstream problems (Sanders and van de Grift 2022). Where the sea formed the border between states, currents connected neighbouring countries and created cross-border problems as well. Thermal pollution of the sea potentially affected fisheries on both sides, as the Danish anti-nuclear movement flagged in their protest against the Swedish nuclear plant Barsebäck near Copenhagen in 1976 (Meyer 2022b, 569).

The border siting of the Swiss final repository and its transboundary implications (Steinebrunner 2019, 374) are thus but the latest instance in the longer history of a phenomenon that demonstrates the intricate relationship between nuclear energy and political and physical geography.<sup>1</sup> The problem

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<sup>1</sup> Different types of nuclear installations – from uranium mines and power plants to reprocessing plants and repositories – usually imply different kinds of risks and environmental impacts. The specific geography of nuclear risks of the different types of nuclear installations had a certain impact on the respective geography of conflicts and protests, such as upstream-downstream problems regarding thermal pollution and liquid sources of radioactive risks, or mere distance, in case of accidents. For examples, see contributions in Kaijser and Meyer 2018.

loomed particularly large in the 1970s, when numerous nuclear power plants were built – frequently near national borders. As nuclear risks became more widely known to the public, this led to controversies and protests in the 1970s and 1980s (Josephson, Meyer, and Kaijser 2021, 34-6; Presas I Puig and Meyer 2021). Border regions became hotbeds of protest and places where trans-boundary anti-nuclear movements sprang up and spread within and beyond countries (Kirchhof and Meyer 2021; Tompkins 2023). Governments addressed these conflicts bilaterally (Tauer 2012), but international organisations tried to offer solutions as well (Kaijser and Meyer 2021, 268-70).

The regional international organisation competent in the area of nuclear energy in post-war Europe were the European Communities (EC), the predecessor of today's European Union (EU). The 1957 Euratom Treaty had already foreseen certain rules and procedures regarding nuclear installations at national borders. In the mid-1970s, at the height of the conflict about nuclear energy, various EC actors undertook to make new rules for the siting of power plants – in order to alleviate the growing cross-border conflicts and thus to help ensure European energy security. Eventually, however, EC member states could not agree on any binding rules.

This article examines the attempts at EC rulemaking regarding the siting of nuclear power plants at the border in the second half of the 1970s and explains why they failed. It examines who proposed such ideas and for which reasons, discusses the models they drew on, and traces the European legislative process that ended in limbo. The article argues that while the cross-border nature of the problem of nuclear installations at the border justified legal solutions at the level of the European Communities, the geography of nuclear plants militated against supranational solutions – at a time of national vetoes and when conceptions of energy policy were at the core of state sovereignty. By taking the physical and political geography of nuclear energy into account, the article offers new perspectives on the debate on borders, on the history of nuclear energy and society, and on the history of European integration.

This historical account is based on the analysis of primary sources from European Union and national archives. It draws on parliamentary debates and reports, European Commission documents, and exchanges of letters, but on also newspaper articles in order to examine the attitudes, motivations, and goals of the contemporary actors and their interplay.

The article focusses on the 1970s, when – in a period of nuclear expansion and growing protest – the issue of coordinated planning seemed most pressing. In the face of growing concerns over energy security in the wake of the oil crises of 1973 and 1979, many energy planners and policy-makers in Europe considered the construction of more nuclear power plants to be indispensable (Meyer 2022a).

The article is organised as follows. After discussing the state of the art and some conceptual considerations, the article presents the structures of

technocratic, de-politicised expert governance of cross-border problems relating to nuclear energy, which the EC had established since the 1950s. These served as a model for subsequent proposals when nuclear energy and its cross-border implications became more controversial in the 1970s. The main part of the article analyses the demands for and the subsequent attempt to institute EC rules for the siting of nuclear power plants in the second half of the 1970s and the early 1980s. The conclusion seeks to explain why this attempt at rule-making failed and the extent to which geography and borders played a role.

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## 2. Nuclear Energy, Geography, and Borders in Europe: Concepts and Approaches

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This article approaches the history of conflicts about nuclear sites at European borders in the 1970s and the attempt at finding EC-level solutions from the perspective of three different literatures: border studies, the history of nuclear energy and society, and the history of European integration.

First, in recent decades, borders have become an issue of intense study within geography, but also in related disciplines, and given rise to the field of border studies (Newman 2011; Paasi 2011). Students of border studies have highlighted that borders – or boundaries (Paasi 2009) – are more than simply straight lines between national spaces, in order for a state to exercise “territoriality, sovereignty and control” (Johnson et al. 2011, 63). Borders should instead be perceived as legal-political institutions that fulfil different functions: First, “military-strategic functions,” not least to control the territory against outsiders, but also to have access to transport routes; second, “economic functions” regarding markets, trade, capital, labour, and access to resources; third, they have “constitutive functions,” as borders delineate a sovereign entity with a bounded number of citizens and the space in which its rules and laws are valid; fourth, borders are central signifiers of identity and help the state to build identity within this space; and finally, borders have important political functions domestically, structuring the “economic, education, energy, and transportation infrastructure of a state and its administrative institutions.” These far-reaching functions provide a certain incentive for political decision makers to assert the role of borders (Blanchard 2005, 691-2). However, the strength of this incentive varies over time. In the 1970s, in a situation of energy crisis, governments asserted national sovereignty, insisting that energy policy be organised within national borders (Schubert et al. 2016, 99-103).

Traditional conceptions of borders have increasingly been challenged since the 1990s against the backdrop of European integration and globalisation,

which led to increasing permeability – at least of the internal borders in the EU – and the “conflicting logics of ‘national borders’ and ‘supranational’ unity” (Johnson et al. 2011, 61). Researchers have highlighted and studied the permeability of borders, notably in border regions, which they characterised as spaces of transition, of cooperation, of overlapping identities, but at times also of conflict. Researchers have focused on practices of “bordering” – of re-asserting or questioning, of dealing with borders, suffering from them some times, benefitting at others (Scott 2012, 86-9). Borders have been reconceptualised as “engines of connectivity,” and it has been emphasised that “borderlanders” – citizens but also their NGOs – are frequently able to “jump scales” – taking their concerns from the local to the national, supranational, and international levels (Johnson et al. 2011, 67). Indeed, NGOs have taken their concerns from the border areas to Brussels – directly (Meyer 2014), but also indirectly via the media and the political responses in the European Parliament, as will be discussed below.

The second perspective from the literature came from historians of technology, energy, and the environment as they studied the relationship between nuclear energy and society in a transnational and comparative perspective, where they began to single out the problems posed by nuclear installations at the border as focal points of these conflicts. They suggested a clearer distinction from generic transnational issues: “transboundary” or “cross-border” issues were defined to “relate to a problem which is due to a shared border between two (or more) neighbouring countries” (Kaijser and Meyer 2018, 10). The common border is thus constitutive for a cross-border issue. At the core of “transboundary environmental issues” – which includes nuclear sites – are “cross-border effects of risks or pollution, which are at geographical proximity” (Kaijser and Meyer 2018, 10; see also Taylor 2008, 462). Transboundary issues tend to trigger transboundary relations to resolve these issues – at times in more conflict-ridden manner, at other times in a more cooperative fashion (Kaijser and Meyer 2021).

Research on different actors in bi- or tri-lateral case studies of border sites has demonstrated that – in line with ideas about “bordering” practices from border studies – traditional and newly emerging ties across the border region have contributed to the effectiveness of anti-nuclear protest and even helped to create new identities and imaginations of cross-border regions (Milder 2017; Pohl 2019; Rubio-Varas et al. 2018; Storm 2014, 47-73; Tompkins 2016a, 2016b). In other regions, and at other sites, the lack of a common language and shared protest traditions has militated against such cooperation. This allowed governments to affirm the border (Müller 2013; Oberlé 2016) and to single out protesters from across the border as foreign intruders (Tompkins 2011). There is thus ample knowledge on the invocation – and questioning – of cross-border identities and on cross-border cooperation in specific regions. However, we know very little about what border studies described as

“jump[ing] scales” (Johnson et al. 2011, 67), namely the engagement of supranational and international organisations with cross-border problems (Josephson and Lehtonen 2021; Kaijser and Meyer 2021, 268-70; Meyer 2013, 2014, 2022a). This is surprising, given that one of the key *raison d'être* of international organisations is to address transnational and cross-border problems – particularly regarding cross-border environmental impacts (Disco 2013; Fall 2011; Kaijser 2021; Yao 2022).

Finally, this article examines a case from the history of EC politics and policy-making. Historians of European integration have tended to juxtapose the supranational and intergovernmental institutions within the framework of the EC (Kaiser, Rasmussen, and Leucht 2009), particularly with a view to the second half of the 1970s and early 1980s, when European integration seemed “in the doldrums” (Dinan 2014, 168; Griffiths 2006). The supranational institutions, the European Commission, the European Court of Justice, and notably the European Parliament, are usually described as promoters of further European integration (Roos 2021), manufacturing further competences through diligent arguments and task expansion for the EC (Krumrey 2018). By contrast, particularly in the wake of the Luxembourg compromise of 1966 that reasserted the national veto (Bajon 2012), member state governments were viewed as having blocked further integration. In the light of such a dichotomous conception of European integration history, the failure of the attempt to make rules on power plants at European borders should not come as a surprise. However, this article argues that geography played an important role in informing the position of member states, and thus seeks to paint a more nuanced picture, considering the geography of nuclear power, and the particular issues of borders and of cross-border problems.

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### 3. Euratom’s Regulation of Cross-Border Impacts since the 1950s

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The regulation of nuclear installations’ cross-border impacts had been part of the mandate of Euratom, one of the three constituent institutions of the EC, from its inception in 1957. The legal solution and practice established since then served as a model for subsequent attempts at law-making in the 1970s. Created in the wake of the American-led Atoms for Peace campaign that presented nuclear energy as the inexpensive and inexhaustible energy of the future and sought to dispel the associations with the horrors created by its military uses (Trischler and Bud 2018, 197-9; Uekötter 2022, 70), Euratom was intended to promote nuclear energy and European integration through nuclear research and technology (Curli 2017).

Like the International Atomic Energy Agency (IAEA) (Röhrlich 2022), Euratom had a dual mandate – not only to promote, but also to regulate the nuclear sector (Reitbauer 2015; Södersten 2018, 12-9). Ensuring nuclear safety was considered indispensable not only for practical reasons, but also to build trust in atomic energy in the wake of Hiroshima and Nagasaki (Josephson and Lehtonen 2021; Lehtonen et al. 2022).

The Euratom Treaty included provisions regarding the protection of “Health and Safety” against the effects of ionising radiation. For this purpose, Euratom was to establish common “basic standards” and define threshold values (“maximum permissible doses”) (Euratom 1957, art. 30). Two Treaty articles specifically addressed cross-border impacts: article 34 required European Commission approval for “particularly dangerous experiments” with probable transboundary impacts (Euratom 1957, art. 34). Article 37 was more important, as it referred to the cross-border effects of nuclear waste disposal. It obliged member states to inform the European Commission in advance of any “plan for the disposal of nuclear waste in any form” if such plants were “liable to result in the radioactive contamination of the water, soil and airspace of another member state” (Euratom 1957, art. 37).

Article 37 had a broad scope of application, since nuclear power plants – but also other types of installations – routinely emit low-level radiation through the release of small quantities of solid, liquid, and gaseous radioactive materials, into the air through smokestacks or via the cooling waters, most of them isotopes with a short half-life (Iqbal et al. 2021, 1031). Since 1959, member states had thus notified the Commission about most of their nuclear projects, a total of 79 plants and activities by 1972. Notifications ranged from “research and training reactors” to the “controlled submersion of radioactive wastes in the sea” (European Commission 1972, 10-1), a practice that was (partially) banned internationally only in 1972 (Hamblin 2008).

In order to assess the health and safety risks involved, the European Commission relied on expert governance (Oppenheimer et al. 2019). The pool of experts was small, and they had close ties to nuclear research and industry, which limited their independence. The same group of 20 “health experts” that had already established the “basic standards” for health and safety made these assessments. It was appointed by Euratom’s powerful high-level expert group, the “Scientific and Technical Committee” (STC), which directly advised the Commission (Euratom 1957, art. 30, 31, 37, 134).

Over time, the composition of the “health experts” group changed: By 1972, the share of health experts was reduced from half to around a third, as the group became more interdisciplinary. About two thirds of the experts worked for nuclear facilities and the nuclear industry; the remaining third for government departments (counted on the basis of: European Commission 1972, Appendix I 1-3).



By the time nuclear energy and sites at the border became issues of increasing public concern, the EC thus already had in place a system of light-touch regulation by expert governance, a practice that was not uncommon for cases of cross-border regulation and within the EC/EU (Henrich-Franke 2018; Tamtik and Sá 2012). The Commission was formally responsible. However, it relied on a permanent committee structure that demonstrated characteristics of an “epistemic community” (Haas 1992, 3). The experts shared basic worldviews (what Haas called “normative and principled beliefs”) – notably, that nuclear energy was desirable and its health impacts were small and could be managed – and problem descriptions (what Haas described as “causal beliefs”) – in terms of “safe” dosages and thresholds. The experts also agreed that science required quantification, with assessments based on “absolutely indisputable calculations and precise numerical results” (European Commission 1972, 19). With their close ties to the nuclear sector and insider experience, the experts were surely able to master the technical details regarding the health risks, but less likely to question their own assumptions and to be open to new, more fundamental issues – such as the implications of low-level radiation (Gofman and Tamplin 1971; Semendeferi 2008). This was not much of a concern for the European Commission, however, when they suggested the solution of extending this received practice of expert governance in 1976.

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#### 4. The New Nuclear Controversy and the Problem of Siting in the 1970s

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The political demands at the European level for an EC siting policy in the mid-1970s can only be understood against the backdrop of four interrelated factors: First, the building spree of nuclear power plants. Second, the practice of siting decisions. Third, this coincided with the new environmentalism and the growth of (transboundary) protest, particularly in border areas.

Fourth, since the late 1960s, nuclear energy had been transformed from a technological vision into an important part of electricity provision, as an increasing number of ever-larger nuclear power plants was built in Western Europe. Before the oil crisis, utilities invested heavily, as experts and lobby groups anticipated a continued steep rise in electricity consumption (Ehrhardt 2012). From 1973 onwards, in the context of the oil crisis (Bösch and Graf 2014), governments encouraged utilities to boost their investment in nuclear energy, in order to exploit a supposedly domestic energy source and reduce import dependency. Finding suitable sites became increasingly difficult, for reasons of economic, political, and physical geography. Sites needed to be sufficiently close to consumers, but far enough from centres of

population for safety reasons, and they required access to ample cooling water (Kaijser and Meyer 2021, 257-8).

Different member states approached the problem in different ways. When France implemented the so-called “Messmer plan” of March 1974, the sites of the numerous new plants were chosen in a centrally planned, technocratic top-down manner, along the sea and major rivers (Bess 2003, 94-5; Nelkin and Pollak 1981, 59). In other member states, the siting of power plants led to much controversy – with a view to both thermal pollution and cross-border impacts. For instance, in the Federal Republic of Germany, some subnational governments responsible pressed ahead with their site selection along major rivers, and had to conduct studies regarding thermal pollution (SZ 1974). The federal government tried to coordinate site selection, also in order to preempt cross-border conflicts between different federal states, as sites were frequently placed near state borders (Eisenbeiß 1974).

Nuclear expansion in the 1970s coincided with the rise of environmental concerns and policies, across Europe and internationally (Kirchhof and Meyer 2021, 335-6). So far, nuclear power had usually been represented as a clean source of energy: it helped avoid the controversial damming of rivers for hydro-power and polluting coal combustion (Hasenöhr 2018). However, since 1969, newspaper reports had invoked horrific images of steaming rivers and dying fish (Löbsack 1970; R[udzinski] 1969). This resonated with the wider debate about water pollution in Europe (Meyer 2021). As had already taken place in the US (Walker 1989), thermal pollution concerns led to an increasingly critical debate on the environmental impacts of nuclear power (Meyer, forthcoming).

Thermal pollution, and the visual and meteorological impacts of cooling towers for farmers and wine growers, were central issues for those who viewed the rapid expansion of nuclear power and its impact on their local livelihoods critically. Border regions, particularly the upper Rhine valley, where French, West German, and Swiss utilities planned numerous nuclear plants, became hotbeds of protest, culminating in spectacular site occupations in 1975, such as at Kaiseraugst in Switzerland (Häni 2018; Kupper 2003) and Wyhl in West Germany (Milder 2017; Tompkins 2016a). Rather than accepting the border as a division, activists cooperated transnationally in the region and between different regions (Milder 2016; Tompkins 2020). These protests raised major concerns among the advocates of nuclear power, and led to demands for action to defuse the conflict and ensure that those constructions deemed necessary for energy security and continued economic growth could go ahead undisturbed (Ehrhardt 2017; Meyer 2022a). One of the solutions suggested to address both protests and cross-border problems was an EC-wide siting policy.

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## 5. New European Rules for Sites on the Border?

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Almost simultaneously in early 1976, two different actors placed the problems of rising anti-nuclear protest and cross-border environmental impacts of nuclear power on the agenda of the European Communities and demanded EC-level rule making. Looking to the EC for a solution was hardly self-evident at a time when European integration seemed deadlocked by economic and monetary crises and national vetoes. Both Belgian premier Leo Tindemans, who included such a demand in his report on “European Union” (Woyke and Steffens 1978, 36) and the members of the European Parliament’s (EP) Committee on Research and Technology, which proposed a report on this issue on its own initiative, were already deeply involved and, indeed, deeply committed to European integration.

The Christian democrat Tindemans had been asked by the member states in December 1974 to prepare a report on the visionary goal of “European Union” (Nielsen-Sikora 2007, 380), on the desirability of which the member states themselves had very different views. The Belgian premier toured the capitals and consulted broadly (Gz 1975), and apparently did not fail to notice the cross-border conflicts on nuclear energy. Tindemans’ far-reaching proposals on economic, foreign policy and institutional issues were widely discussed (ch 1976; EK 1976; Lambert 1975; Thorn 1976). However, his equally ambitious call for a European nuclear regulator went largely unnoticed:

The European Union should possess a common body responsible for regulating and controlling nuclear power stations, with similar responsibilities and powers to those of the Nuclear Regulatory Commission in the United States. Control should be exerted over the siting, construction, and operation of the power stations, the fuel cycles, and the disposal of radioactive and thermic waste. (Tindemans 1976, 27)

Tindemans made a proposal that was timely, but bold both at a symbolic and a political level. He referred to ongoing debates about thermal pollution and nuclear waste already addressed by the EC Environmental Action Programme of 1973 (Council of the European Communities 1973), which provided the basis and work programme for new EC environmental policy. At a political level, this proposal was far from innocent, because it suggested moving important regulatory powers regarding “siting, construction and operation” from the member states to the EC level. This went far beyond Euratom’s more limited existing competences. Such a proposal implied an important shift of sovereignty in energy policy, interfering with national energy planning.

The proposal seemed very timely, also with a view to the international controversy over nuclear regulation. In October 1974, the new United States (US) President Gerald Ford had announced the dissolution of the traditional

Atomic Energy Commission, which bundled promotional and regulatory functions (ddp 1974). A new, more independent regulatory agency was created (Walker 2000, 29). Similar institutional reforms were undertaken in some EC member states at the time as well, as in Denmark (Meyer 2019, 80-1).

Tindemans made clear why he considered such a new institution necessary: shifting regulatory oversight to the European level would ensure “strictness, openness and in particular independence” (Tindemans 1976, 27). National regulators were constantly under pressure, “since [...] our States are themselves involved, directly or indirectly, in decisions as to siting and construction” (Tindemans 1976, 27). An EC-level regulator would enjoy more credibility and make the “necessary development of nuclear energy in Europe [...] acceptable to public opinion” (Tindemans 1976, 27). In line with the knowledge-deficit model (Simis et al. 2016), which led advocates of nuclear power to assume that critics of nuclear energy were uninformed and emotional (Hamblin 2006, 735), Tindemans argued that citizens’ “psychological [...] reactions throughout the whole of Europe against the setting up of nuclear power stations” needed to be “calmed” (Tindemans 1976, 27).

However, at a symbolic level, pointing to the United States was anything but innocent. Granting an EC or “European Union” institution “responsibilities and powers similar to those of the Nuclear Regulatory Commission in the United States” (Tindemans 1976, 27) harked back to traditional European federalist visions of a United States of Europe. Hence, for its ideological implications, more sovereignty-conscious governments would possibly have read such a proposal as a provocation. This may be a reason for the proposal’s lack of resonance.

By contrast, an own-initiative report and resolution by the EP, at the time merely an unelected, consultative body, was more influential in placing the issue on the EC agenda. Like Tindemans, the EP linked their demands to the new environmental policy, in the making of which it had been deeply involved since 1969 (Meyer 2021). With reports and questions, Members of the European Parliament (MEPs) had highlighted problems of thermal pollution and the transboundary environmental impacts of nuclear energy, notably on the Rhine (Boersma 1970; Jahn 1972; Oele 1972). EP efforts on this issue continued with an own-initiative report (European Parliament 1975) regarding the “Council Resolution on Energy and the Environment” (Council 1975). Such reports and questions were among the few instruments the largely powerless assembly had at its disposal (Stein 1959, 243).

In this context, starting in the summer of 1974, the EP’s Committee on Energy, Research, and Technology and its German Christian Democratic rapporteur Hanna Walz, one of the few women MEPs at the time, prepared a report and resolution “on the Conditions for a Community Policy on the Siting of Nuclear Power Stations taking account of their Acceptability for the

Population” (Walz 1975, 5-7). It explicitly linked the issues of siting and popular opposition.

Even though the EP’s plenary debate on the report on 13 January 1976 was within days of the publication of the Tindemans report, only two British MEPs mentioned Tindemans’ suggestions. They, as well as Energy Commissioner Henri Simonet, dismissed Tindemans’ proposal for a new regulatory agency as unrealistic (European Parliament 1976a, 46, 51, 65 Lord Bessborough, Derek Walker-Smith, Henri Simonet). However, almost all MEPs speaking in this debate shared Walz’ (and Tindemans’) view that nuclear energy was indispensable for growth and prosperity, and that conflicts around nuclear power plants could be defused through the involvement of EC-level institutions (European Parliament 1976a).

The report and resolution suggested different types of measures: First, more coordinated planning through a Community siting policy based on “a Community map” and cooperation across all levels of government (European Parliament 1976b); to be combined, second, with research and technological fixes that were to externalise problems to where they would meet less opposition. Assembling plants in “nuclear parks” was to reduce the risk related to the transport of nuclear materials, but also implied fewer sites all in all; placing nuclear plants on “platforms at sea or underground” would keep them away from citizens and thus invisibilise them; developing technologies of dry cooling would enable utilities to site plants away from water courses (European Parliament 1976b). Third, in line with what a number of European countries such as Austria, Sweden, Denmark, or West Germany already practiced (Hirsch and Nowotny 1977; Meyer 2019, 94-100; Nelkin and Pollak 1977, 343-4; Popp and Lang 1977; Thunell and Liljegren 1975), the Commission was to roll out “an objective information campaign at European level [...] to dispel negative, frequently over-subjective attitudes” (European Parliament 1976b). Like Tindemans, Walz and many committee members also subscribed to the knowledge-deficit model and assumed that that opposition to nuclear power was due to a lack of knowledge (Meyer 2022a, 198-9). Finally, however, the resolution also demanded that citizens be empowered to improve their “constitutional means in pressing their claims” (European Parliament 1976b) via the courts.

The EP resolution certainly had an impact and persuaded the European Commission, the only body within the EC entitled to make legislative proposals, to propose legislation. The Commission acted swiftly, by early December 1976, and kept referring to EP demands to justify its proposals (Committee on Energy and Research 1977b, 9). The Commission had not started completely from scratch, however, as it had been working on these issues in the context of the 1975 “Council Resolution on Energy and the Environment” (Council 1975).

The Commission submitted two separate legal instruments, which it justified not only by invoking concerns for the environment and energy planning, but also for cross-border problems in “frontier regions” (European Commission 1976a, 2).

The first instrument was a draft resolution “concerning consultation at Community level on the siting of power stations” – a non-binding instrument that would be more easily acceptable to the member states, who indeed accepted it in November 1978. This resolution primarily committed the member states to set up a “body for consultation at Community level on problems arising out of the siting of new power stations” (European Commission 1976a, [495-496] art. 2). This committee was intended to establish a consultation mechanism as an informal instrument of mutual learning and exchange, in order to develop “common criteria and methodologies, particularly on the siting of power stations in frontier regions and on international waters” and to advise the Commission on future legislative proposals (European Commission 1976a, [495-496] art. 2).

The second proposal was much more demanding and involved a much clearer shift of decision-making to the EC level. A binding, directly applicable regulation was to introduce “a Community consultation procedure in respect of power stations likely to affect the territory of another Member State” (European Commission 1976a). Effectively, it extended the expert governance of Euratom Treaty article 37 to all power plants and their environmental and siting-relating concerns. Member states would be required to submit the necessary information, which was to be evaluated by a committee of “independent experts,” followed within six months by a statement by the European Commission. Both the member states involved and the Commission were entitled to start the procedure (European Commission 1976a, [497-501], art. 4; 1976b). Effectively, such a proposal stopped short of Tindemans’ idea of a European regulator.

The EP and its Committee on Energy and Research remained advocates of what they had initiated, and drew up a report demanding a more ambitious policy (Walz 1977, 5). MEPs stressed that the proposal was in fact “too modest” (Committee on Energy and Research 1977a, 8). This contrasted with the much more critical views expressed by the European Centre of Public Enterprises (CEEP), the lobbying organisation of the (state-owned) utilities (CEEP 1977), and business and labour represented in the EC’s Economic and Social Committee (ESC 1977, 1-2). Both feared additional hurdles for the already cumbersome licencing of power plants.

The proposal for an EC regulation required unanimous approval by the member states, which proved difficult to achieve, not least since a number of member states preferred bilateral, ad-hoc solutions, and resented extending EC competences. In 1977, anti-nuclear protest peaked in a number of countries, with large, sometimes violent, and often transnational manifestations,

for instance, at the fast-breeder sites in Kalkar on the West German side of the Dutch-German border and at Malville in France with numerous protesters from beyond that country's borders (Kirchhof and Meyer 2021, 343-4). Against that backdrop, adding another layer of decision-making did not seem attractive to national policy makers. The French government, in particular, showed little interest in any EC interference with its energy policy of rapid nuclear expansion and numerous border sites, such as Fessenheim on the Rhine, which was about to go online. Hence, throughout 1977 and 1978, the member state representatives in the Council of Ministers negotiated without achieving any agreement (Kühn 1978).

In the face of this legislative deadlock, in March 1979, a nuclear accident occurred at the Three Mile Island plant near Harrisburg, Pennsylvania, heightening awareness for the risks of nuclear accidents and their potential cross-border impact (Bösch 2017). The new West German Commissioner for Energy Guido Brunner, a Liberal and whole-hearted supporter of nuclear energy, tried to exploit this new situation and resubmitted the proposal for a regulation. He added a new justification and placed it on the agenda of the Council of Ministers responsible for Energy in May 1979 (European Commission 1979).

However, the member states were apparently less impressed by Three Mile Island than Brunner had hoped. Only the Irish government changed their position and now supported the proposal. Border problems played a role in this realignment: the Irish were facing new British plans for a large and potentially polluting reprocessing plant on the Irish Sea (Davis 1979). Even two years later, in April 1981, most member states were still willing to continue negotiations, even if the French government outright questioned the desirability of this legislation (Rat der Europäischen Gemeinschaften 1981, 2). By that time, the main cross-border problems of nuclear siting in the EC involved French plants: the large Cattenom plant on the Moselle, facing Luxembourg and West Germany, and Chooz on the Meuse, which was almost completely surrounded by Belgian territory. The newly elected MEPs kept highlighting these cross-border issues with parliamentary questions and reports in support of the Commission proposal (Lizin 1981). In search of a compromise, the Dutch and Danish suggested limiting the scope of the regulation to only those cases where bilateral agreements had failed (Rat der Europäischen Gemeinschaften 1981, 2). Frustrated by the lack of agreement, in late 1981, the new responsible Commissioner, West German Christian democrat Karl-Heinz Narjes, effectively buried the proposal (Beelitz 1981).

Instead, Narjes mobilised alternative solutions that circumvented Council unanimity. In its updated recommendations for the application of article 37 in 1982, the Commission included clearer timetables for member states to submit information. It was clarified that information needed to be provided in advance of the construction, let alone the start of operation of the

respective plants (European Commission 1982). This was a response to the late submission of documentation according to article 37 for Cattenom, and a new 1980 EP resolution on “the siting of nuclear power stations in frontier zones” (Alemann 1980, 6-7). The demand for common siting criteria remained on the EP agenda. However, in the wake of Three Mile Island, the EP was more divided on nuclear energy. The main motivation among MEPs for pursuing such a policy was no longer to improve public acceptance, but to address cross-border problems of nuclear safety (European Parliament 1982). However, even a non-binding resolution on “trans-frontier radiological problems” (European Commission 1983) that the Commission prepared in 1983, failed to generate sufficient Council support, and was eventually withdrawn in 1993 (European Commission 1993, 12).

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## 6. Why These Rules Were Never Made: Geography and Decision-Making

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Why did it prove impossible to achieve agreement on common rules for the siting of nuclear power plants in the EC in the 1970s, rules that simply extended the pre-existing practice from 1950s? What role did geography play in this context and how does this case contribute to this special issue on the geography of nuclear power? And what can we learn with a view to debates in relevant literatures – notably in border studies, in the literature on nuclear energy and society, and in European integration history?

Geography mattered at a very fundamental level because the siting of nuclear power plants in particular – with their cooling water needs – had certain requirements with a view to physical geography. Given that water courses often constituted borders, this posed cross-border problems – and political dilemmas – with a view to political geography. One way of addressing these dilemmas was promoted by pro-integration advocates like Leo Tindemans and the European Parliament, out of fear that this dilemma might undermine energy security and economic growth throughout Western Europe. The European Commission considered this an opportunity to extend existing procedures and proposed a European siting policy in 1976.

Why did this fail? Obviously, decision-making rules were decisive, and unanimity rules posed a high threshold for taking a decision. European integration history has pointed to the extremely slow erosion of the national veto (Bajon 2020), which remained quite firmly in place at the time. From the perspective of European integration history, the failure to accept a new binding EC regulation on the siting of power plants may thus simply be read as the result of sovereignty-conscious member states defending what they took to be their national interest. Among these national interests, the energy



transition to nuclear had a high political priority for France especially, with the promotion of patriotism linked to its civil and military nuclear achievements (Hecht 1998). However, this interest also had a geographic dimension – the lack of domestic coal resources and the fact that France was upstream on a number of major rivers suitable for building power plants. By contrast, there was little to be gained, since no country but Switzerland was upstream on French rivers. These factors were aggravated by Gaullist ideological traditions that informed a certain scepticism towards European integration.

Politically, from the perspective of the governments of larger countries such as France, and indeed, West Germany, bilateral negotiations were often considered preferable, whereas for smaller countries, a European procedure could make up for power imbalances. Countries' geography-related interests were not fixed, but subject to change: the Irish government became very interested in this legislation, as it faced new plants on the other side of the Irish Sea in the early 1980s.

With a view to the history of European integration, we can thus observe that geographical factors informed interests and positions on the desirability of EC-level legislation. Even though this legislation failed, it is remarkable to what extent supranational actors were able to place this cross-border issue on the EC agenda. MEPs – many of whom had a stake in energy policy or in the respective region – engaged in “bordering” and helped this concern to “jump scales” from the regional and national to the EC level, as the border studies literature suggested. However, while the border studies literature focuses strongly on the agency of those in the region, this case illustrates processes of “bordering” by supranational actors, who appropriated the problem of the border and used it to promote their own political projects of advancing European integration.

With a view to the history of nuclear energy and society, examining EC-level politics demonstrates the difficulties of achieving solutions to cross-border problems, despite existing precedence. At this level, veto-players, the need to search for compromise, and the lack of direct involvement make finding appropriate solutions more difficult. This observation is well in line with findings on international organisations and environmental protection more generally, such as the dismal record of the International Commission on the Protection of the Rhine (Disco 2013). Moreover, while it is analytically important to distinguish between transboundary and transnational problems at the local, regional, and national levels, this distinction becomes blurry at the EC level, as the concrete cross-border problems are inscribed into the logics, laws, and procedures of international institutions.

Geography and decision-making rules were not the only reasons why this legislation failed, however: time and the shifting attention to various issues played a role. By the late 1970s, the scale of the problem and thus the urgency of finding common rules for new nuclear plants was waning. In the wake of

the oil crisis, as growth rates declined, so did the growth of energy demand. Thus, the expansion of nuclear power in Europe was much slower than had been anticipated, and fewer nuclear plants needed to be placed on a map – and near a border. The relative decline of anti-nuclear protest also meant that there were fewer people who needed to be calmed by such a siting policy. The solutions from the 1970s also began to seem outdated. Even in conjunction with an information campaign, a very 1970s-style policy instrument (Meyer and Oertel 2024) – a coordinated European siting policy involving 1950s-style technocratic expert governance was to have only limited impact on public opinion.

Even though this legislation failed, the problems posed by the geography of nuclear power were being addressed – but not in the way the European federalist champions of supranational integration, the sponsors of the proposals of a common siting policy, had imagined. Instead, governments continued to consult bilaterally: sometimes grudgingly, sometimes because they considered it more efficient. The European Commission tried to use modifications to the application of article 37 to improve rule-making, and even took France to court over Cattenom to have these rules implemented (European Court of Justice 1988a, b). It was only after Chernobyl, however, that the cross-border issues were addressed at the international level in the IAEA Convention on Nuclear Safety (1994).

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Alicia Gutting, Per Högselius, Teva Meyer & Melanie Mbah

Geographies of Nuclear Energy. An Introduction.

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Contributions

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